

Page 61

1 modeling protocol or acceptable control measures,
 2 we would initiate a formal SIP call.
 3 On April 2, 2001, we received the modeling
 4 protocol from the State. The protocol is not
 5 acceptable to EPA because it appears not to follow
 6 longstanding regulation and guidance for
 7 determining increment consumption and it would
 8 underestimate the amount of air quality degradation
 9 that is occurring in the Class I airsheds. We had
 10 numerous discussions with the State in April and
 11 May to try and reach an agreement on the protocol.
 12 Some of the conversations included staff and
 13 managers from EPA headquarters office.
 14 EPA and the Department could not reach
 15 agreement, and we sent our commitment letter -- our
 16 comment letter to the State on June 25th, 2001.
 17 The State subsequently approached John Seitz, the
 18 Director of the Air Quality Planning and Standards
 19 for EPA for advice on the matter. Mr. Seitz
 20 responded on December 12th, 2001, in a letter to
 21 the Department concurring with our June 25th, 2001,
 22 letter.
 23 When we could not reach agreement with the
 24 State on the modeling approach, EPA performed its
 25 own modeling based upon what we believe is a

Page 62

1 reasonable analysis following EPA regulations and
 2 procedures. The draft report was released on March
 3 5th, 2002, and the comment period closed on April
 4 29th, 2002. Our analysis showed numerous
 5 violations in the four Class I areas, and the
 6 results were very similar to what the State showed
 7 in their original 1999 Calpuff analysis.
 8 On April 5th, 2002, the State's draft
 9 modeling analysis became available on the
 10 Department website.
 11 With this background information in mind,
 12 I would like to comment on the State's April 2002
 13 Calpuff modeling analysis, which is the subject of
 14 today's hearing. But first I want to provide EPA's
 15 interpretation of the monitoring data and its
 16 usefulness regarding the current PSD issue. This
 17 is issue number 1 in your scope of the hearing.
 18 The State collected SO₂ monitoring data in
 19 Theodore Roosevelt National Park South Unit
 20 intermittently between 1980 and 1999 and in
 21 Theodore Roosevelt North Unit between 1980 and the
 22 present time. In the hearing notice the State
 23 indicates its belief that the monitoring data
 24 support the position that PSD Class I areas are
 25 being protected in North Dakota.

Page 63

1 EPA generally considers monitoring data
 2 unreliable for this purpose as it cannot provide
 3 information to discern between sources. Monitoring
 4 data will include not only increment-consuming
 5 source emissions, as defined by regulations, but
 6 also emissions from nonincrement-consuming sources
 7 and background level pollution. In addition,
 8 monitoring data collected at a single location is
 9 not representative of concentrations that may occur
 10 at or nearby Class I receptors because SO₂
 11 concentrations can vary greatly over small
 12 distances.
 13 EPA has reviewed the historical monitoring
 14 data, and we believe that the data from Theodore,
 15 Roosevelt National Park North Unit and to a lesser
 16 extent the South Unit monitor are influenced by
 17 emissions related to local oil and gas activities.
 18 The relationship between local oil and gas sources
 19 and ambient SO₂ concentrations can be seen by
 20 figures -- by comparing figures 1, 2 and 3.
 21 We put up figure 1. As you can see, the
 22 pinkish-red line there is the line that we had seen
 23 earlier from the State, I believe, looking at the
 24 peak emissions in 1982. From the figures it can be
 25 seen that the oil and gas production for the

Page 64

1 counties closest to the Class I areas reached a
 2 peak in 1982. This is a graph that was taken off
 3 the North Dakota Industrial Commission's Oil and
 4 Gas Division's website which shows, interestingly
 5 enough, a peak in oil and gas activities in and
 6 around the park area which peaked at essentially
 7 the same time as the ambient concentrations that
 8 were shown in the earlier slide, we think
 9 establishing a strong correlation between oil and
 10 gas activities. And here's Dunn County similarly
 11 nearby. This is the same pattern shown by the
 12 ambient air quality monitoring data shown in figure
 13 1.
 14 Unfortunately, there are no SO₂ air
 15 quality monitoring data available near Theodore
 16 Roosevelt National Park prior to 1980. The
 17 monitoring data show a large decrease in SO₂
 18 concentrations at Theodore Roosevelt National Park
 19 North Unit in the two years preceding the peak
 20 concentrations measured in 1982. I note the 1980
 21 and '81 data on this map. If that trend had
 22 continued back to the 1977 time period coincidental
 23 with the reduced oil production, concentrations in
 24 the 1976 and 1977 baseline period may have been
 25 lower than those monitored in 1980 or even in

Page 65	Page 67
<p>1 current years. This would be suggestive of 2 possible increment consumption. Without a far more 3 comprehensive historical monitoring record going 4 back to 1977, the monitoring data do not provide a 5 reliable indication of the degree of increment 6 consumption in the Class I area at issue in this 7 hearing.</p> <p>8 Also of interest are the monitoring data 9 from the Dunn Center which is also shown on figure 10 1. The Dunn Center data in this figure is the blue 11 line running through the center. The Dunn Center 12 monitor is located somewhat closer to Dickinson and 13 the major power plant sources, but is further 14 removed from the oil and gas sources. The Dunn 15 Center monitor was actually used -- was actually 16 one of the sites used by the State to test model 17 performance. These data indicate that the 18 concentrations may have actually increased somewhat 19 since monitoring was initiated in 1979. While not 20 located adjacent to any of the Class I areas, these 21 data show how strongly monitoring data are 22 influenced by local sources. This is a major 23 reason why dispersion modeling is the only reliable 24 method available to determine PSD increment 25 consumption. Excuse me for a moment.</p>	<p>1 can't be used to support the proposed conclusion in 2 the hearing notice that the State implementation 3 plan, or SIP, is adequate to prevent significant 4 deterioration of air quality for affected Class I 5 areas. In developing model inputs, the State 6 consistently proposed alternative inputs which 7 would allow higher pollution levels. The State's 8 methodology contradicts the policy and procedures 9 that EPA has used for more than 20 years to 10 determine increment consumption.</p> <p>11 I would like to explain why the State's 12 proposed methods will in essence change the 13 standards to allow more air quality degradation in 14 the Class I areas, while at the same time would 15 underestimate the degree to which existing sources 16 are impacting these Class I areas. Then I will 17 follow up with more detailed comments on some 18 specific areas.</p> <p>19 According to EPA guidance and regulations, 20 a permitted authority will determine for each 21 baseline area the annual average baseline 22 concentration for increment-consuming sources. 23 This baseline concentration will be the annual 24 emission average for each source for the two years 25 preceding the minor source baseline date unless</p>
Page 66	Page 68
<p>1 And now turning to the Department's 2 Calpuff monitoring.</p> <p>3 We carefully reviewed the five years of 4 meteorological data that North Dakota Department of 5 Health and staff had assembled and processed for 6 modeling. The Department's data set included 24 7 surface weather stations, 96 precipitation stations 8 and 6 upper air stations. The data were carefully 9 edited and processed into a format suitable for 10 modeling. The State has written special software 11 to assist in data processing and has also written 12 programs to process output from the Calpuff model. 13 The technical staff skills needed to produce these 14 products is impressive. Your staff have a high 15 level of skill and scientific expertise. 16 Therefore, we used this same database in our own 17 modeling analysis.</p> <p>18 Our major concerns with the State's 19 analysis were not so much with the technical 20 aspects of how the model was implemented, but are 21 more related to policy decisions the State has made 22 in the overall methodology. It appears that the 23 State's current modeling effort needs revision 24 since it does not utilize approved methodologies. 25 As a result, it appears that this modeling effort</p>	<p>1 that emission rate is not representative of normal 2 operations in that time period. For example, if 3 there was a strike or a fire closed down a plant 4 for part of that time. Increments are allowable 5 amounts of pollution over that baseline 6 concentration to which the ambient concentration 7 due to cumulative emissions of all increment- 8 consuming sources is compared.</p> <p>9 Generally, increment consumption is 10 determined by modeling the difference between 11 baseline emissions (1977) and emissions from the 12 most recent two years for a given modeling period, 13 such as the 3-hour average, 24-hour average, and 14 annual average. Increases in emissions are 15 increment consuming, and decreases are increment 16 expanding. Increment consumption is modeled for a 17 number of points within the baseline area modeling 18 domain, known as receptors. One exceedence of the 19 increment per year is allowed from each receptor, 20 making the high second high exceedence a violation 21 of the increment.</p> <p>22 Permitting of sources that will violate 23 the increment is not allowed unless the Federal 24 Land Manager, FLM, of the nearest Class I area 25 grants a variance, stating that the proposed</p>

1 source's emissions will not result in an adverse
2 impact on air quality related values. In such a
3 case, the State may grant a permit and implement
4 needed emission reductions elsewhere to correct
5 increment violations. The State may in effect
6 expand increment by controlling existing sources,
7 trading emission reductions through controls for
8 increasing emissions elsewhere.

9 North Dakota's modeling approach appears
10 to vary from EPA's rules and guidance for nearly
11 every factor considered, significantly altering the
12 amount of pollution that would be considered
13 appropriate for protecting -- in a protected Class
14 I airshed.

15 First, the State selected different years
16 to determine baseline emissions for different
17 sources. But not due to unusual conditions such as
18 fire or labor strike as allowed in established
19 policy, but due to the fact that the sources were
20 not operated at full capacity at baseline.

21 Second, the State added the level of the
22 PSD increment to the second highest modeled
23 baseline concentrations during the year, rather
24 than the actual concentration that was modeled on
25 each day.

1 Taken together, the proposed variants for
2 these factors result in significantly
3 overestimating the baseline concentration for the
4 area compared to EPA guidance and in turn
5 overestimated the allowable pollution levels in
6 these Class I areas.

7 Third, the State calculated increment
8 consumption based on an average -- annual average
9 emission rates, for comparison to the 3-hour and
10 24-hour and annual average increments, rather than
11 estimating emission rates consistent with the
12 averaging time for each increment. Averaging the
13 concentrations over longer time periods eliminate
14 short-term concentration peaks, which is the 3- and
15 24-hour average increments -- which is what the
16 3-hour and 24-hour increments are meant to protect
17 against.

18 It appears that the State's approach
19 significantly underestimates increment consumption,
20 especially for the short-time period averages which
21 are usually the first and most often violated.
22 Also contributing to an underestimate of increment
23 consumption is the assumption on the part of the
24 State that sources which received Department of
25 Interior variances are not included in increment

1 calculations. Such variances are not meant to
2 imply that the sources do not consume increment,
3 which the FLM has no authority to authorize, only
4 that the sources were not expected at the time
5 evaluated to adversely impact Class I air quality
6 related values.

7 However, the granting of a variance does
8 not negate the regulatory responsibility of the
9 State to correct the increment violation. The
10 purpose of a variance is to provide opportunity for
11 cleaner new sources to be permitted while allowing
12 the State flexibility to find other ways to
13 mitigate the increment problem, such as by finding
14 compensating emissions reductions elsewhere.

15 Fourth, rather than identifying the peaks
16 at each receptor and identifying violations for
17 each receptor point, the State proposes averaging
18 the pollution levels for all 49 modeling receptor
19 sites across four Class I areas into only six
20 receptors. This appears to be unacceptable since
21 the purpose of modeling across a domain is to
22 identify locations of peak pollutant concentrations
23 in time and space which may exceed acceptable
24 levels. In addition to losing spatial detail,
25 averaging receptor sites creates an arbitrary

1 factor in modeling outcomes since a permitting
2 authority can easily eliminate an increment
3 violation, or, similarly, a NAAQS violation, by
4 adding receptors in cleaner areas with which to
5 reduce the average.

6 Now, with this summary in mind, I would
7 like to get into some of the details of EPA's major
8 concerns with the State's April 2002 modeling
9 effort. I will talk about them in their general
10 order of importance, but will relate the issues to
11 those you have listed in the hearing notice.

12 First, I would like to comment on the
13 major concerns of the State's proposed
14 interpretation of how to calculate PSD Class I
15 increment using near maximum baseline
16 concentrations. This is number 4 in your scope of
17 the hearing.

18 EPA has long held that the PSD increment
19 calculations must be made based on changes in
20 pollutant concentrations from a specific time and
21 location in the base year. The policy requires
22 that the maximum amount of PSD increment must be
23 determined by modeling the net changes in emissions
24 between base year and current year cases
25 sequentially for each 24-hour time period with at

Page 73

1 least five years of meteorological data. The
2 resulting maximum daily impacts from this analysis
3 are then compared to the 5 microgram per cubic
4 meter PSD increment.

5 An illustration of EPA's increment
6 modeling methodology is shown in figure 4. And I
7 believe this is the identical chart that we showed
8 earlier when Kevin Golden spoke. This method is
9 consistent with the manner in which both modeling
10 and monitoring total SO2 concentrations are
11 reviewed in -- are reviewed to determine compliance
12 with the NAAQS. It is also consistent with our
13 interpretation of the Clean Air Act and definition
14 of PSD increment and baseline concentration in the
15 PSD regulation and guidance for calculating
16 increment consumption.

17 In contrast, it appears that the State is
18 suggesting that the appropriate method for
19 determining the amount of increment consumed is to
20 first model the baseline, the 1976-'77 emissions,
21 and then determine the second-high concentration at
22 each receptor. The State then adds 5 micrograms
23 per cubic meter, the level of the Class I
24 increment, to this value to establish a maximum
25 allowable ambient level. Current year emissions

Page 74

1 are then modeled with the same meteorologic data.

2 The second-high prediction of the current
3 year is then compared to the previously determined
4 maximum allowable ambient level. Compliance with
5 the increment is assumed if the second-high
6 prediction in the current year is lower than the
7 maximum allowable ambient level. This approach
8 disregards the fact that impacts greater than 5
9 micrograms per cubic meter may have occurred on
10 days when the baseline concentration is less than
11 the second-high value. The approach is spatially
12 consistent, but not temporally consistent, and does
13 not provide a true measure of air quality
14 degradation.

15 Compared to the traditional approach, this
16 would establish 24-hour PSD increment levels of
17 less than 5 micrograms on one day per year (the day
18 with the highest baseline concentration), and
19 increment levels greater than 5 micrograms per
20 cubic meter on 363 days per year with lower
21 baseline concentrations.

22 The effect of the State proposed increment
23 methodology compared to the traditional approach in
24 modeling results for Theodore Roosevelt National
25 Park South Unit is shown in figure 5. As you can

Page 75

1 see, we've shown in the dashed line on this where
2 EPA would establish while the statute establishes 5
3 micrograms per cubic meter standard for the 24-hour
4 increment. But when reviewing the State analysis
5 and the effect of the maximum allowable ambient
6 level it created, you can see that for the most
7 part they've established an increment -- a proposed
8 increment which would be substantially higher for
9 nearly every day of the year.

10 From figure 5 it can be seen that on most
11 days the North Dakota proposal would allow Class I
12 degradation that is nearly 8 micrograms per cubic
13 meter higher than the traditional method. The
14 State's approach appears to be inconsistent with
15 the Act and the final increment modeling should be
16 revised to reflect the longstanding PSD increment
17 modeling approach.

18 EPA is also concerned about the
19 interrelationship between receptor averaging and
20 the variable increment approach and how it may
21 affect computed concentrations. In reviewing the
22 data with the previous EPA and North Dakota
23 Department of Health Calpuff studies, there was a
24 significant concentration gradient across both the
25 Theodore Roosevelt National Park North Unit and

Page 76

1 South Unit receptors, with highest concentrations
2 along the eastern boundaries of these areas.

3 Had receptor averaging not been used at
4 these receptors, the baseline concentrations and
5 the State's calculated PSD increment level would
6 have varied significantly from receptor to
7 receptor. This would lead to spatial and temporal
8 discontinuities in the results, and it appears that
9 violations of the 24-hour average increment would
10 have been predicted at several receptor sites.

11 Another concern we have with the proposed
12 variable increment approach is that it relies on
13 having detailed modeling and emissions information
14 on sources during the 1977 base year period to
15 determine the PSD increment level. As I've
16 commented, there is insufficient historical
17 information on these sources in the State's
18 inventory to reliably determine baseline
19 concentrations. This is particularly evident for
20 sources such as oil and gas facilities which
21 operate sporadically, and given their close
22 proximity to the Class I areas may significantly
23 affect baseline concentrations.

24 This is less of an issue in the
25 traditional approach for tracking increment because

1 PSD increment level is not dependent on modeling
2 baseline concentrations. The traditional approach
3 only requires an analysis of the net change in
4 emissions between the baseline period and the
5 present. Estimates of the net change in emissions
6 between base year and current year may be more
7 reliable than emissions estimates that rely on a
8 comprehensive inventory of every source in the data
9 sparse baseline period.

10 The next issue is related to how the
11 Calpuff model was applied, and so is item 1 on the
12 hearing notice list.

13 With regard to the State's April 2002
14 Calpuff analysis, we have concerns with the use of
15 receptor averaging. In reviewing the modeling
16 files it appears that 49 receptors have been used
17 in the State's 1999 Calpuff modeling analysis, and
18 also used in EPA's January 2002 draft modeling
19 study, have been consolidated in the most recent
20 State analysis through averaging to now include a
21 total of only six receptors. The original 49
22 receptors were deployed along the boundaries of the
23 four Class I areas and were spaced at approximately
24 five-kilometer intervals. Theodore Roosevelt
25 National Park is separated by three separate

1 geographic units, North Unit, South Unit and
2 Elkhorn Ranch, and so each unit at Theodore
3 Roosevelt National Park is represented by a single
4 receptor and Lostwood Wilderness Area, Fort Peck,
5 Medicine Lake Class I areas each get one receptor,
6 for a total of six.

7 The proposed averaging of concentrations
8 across individual receptors would effectively
9 reduce maximum predicted concentrations at each
10 Class I area because the modeled SO₂ concentrations
11 are not uniformly distributed. The proposal is
12 inconsistent with EPA's Guidance on Air Quality
13 Modeling which states that, quote, receptor sites
14 are -- receptor sites for refined modeling should
15 be utilized in sufficient detail to estimate the
16 highest concentrations and possible violations of a
17 NAAQS or PSD increment, end quote.

18 The State's proposed approach is also
19 problematic from a technical standpoint. For
20 example, if a concentration at a given receptor
21 exceeded the PSD increment, all one would need to
22 do to resolve the issue would be simply add a new
23 receptor at a lower concentration location and
24 average the results. The intent of the PSD program
25 is to prevent significant deterioration at all

1 locations in a Class I area, not just when average
2 concentrations across a broad area exceed PSD
3 thresholds. For these reasons, the State's final
4 increment modeling analysis should not utilize this
5 receptor averaging approach.

6 Next, I would like to comment on EPA's
7 major concerns with the State's use of annual
8 average emissions to determine PSD increment
9 consumption. This is number 3 in your scope of the
10 hearing.

11 The State is proposing to use annual
12 average SO₂ emissions for all major and minor
13 stationary sources to calculate 3-hour, 24-hour,
14 and annual average increment consumption. It
15 appears the State believes that because their SIP-
16 approved definition of actual emissions states that
17 actual emissions as of a particular date must equal
18 the average rate in tons per year, that they must
19 base their increment analysis on annual average.
20 In this approach, emissions would be calculated by
21 dividing the average hourly emission rate for the
22 year by the average hours of operation.

23 According to EPA rules and guidance,
24 averaging times for emission rates used in PSD
25 modeling must reflect the averaging time of the PSD

1 increment in order to ensure protection of both the
2 short-term and long-term increments. This is
3 consistent with longstanding EPA policy that
4 enforceable emissions limits for contributing
5 sources must be established on a short-term basis
6 to predict both the NAAQS and PSD increments.

7 Many industries emit at higher levels
8 during certain times of the year to meet short-term
9 demands for their products. This is particularly
10 true for the electric power industry where
11 emissions can vary hourly or daily depending upon
12 the demand for power which is related to factors
13 such as weather conditions or workday schedules.
14 Because of these higher than average emission
15 periods, an emission rate calculated over a full
16 year is normally much less than the peak short-
17 term, 3-hour or 24-hour, emission rate for a given
18 source.

19 Use of annual average emissions in the
20 increment modeling will underestimate increment-
21 consuming emissions and, therefore, will not ensure
22 protection of the 3- and 24-hour average
23 increments. For example, the State's approach
24 would not consider a summer heat wave situation in
25 which local power plants are operating at or near

Page 81

1 peak load coincidental with winds blowing toward
2 Class I areas.

3 Annual average emissions would be
4 appropriate for modeling the annual PSD increment.
5 However, both EPA's and the State's previous
6 analysis showed that the annual increment is not
7 threatened at this time. In our modeling analysis
8 the 90th percentile of measured 24-hour average
9 emissions were used to estimate the maximum, or
10 near maximum, emissions for the major increment-
11 consuming sources. In this approach, 24-hour
12 average emissions were approximately 50 percent
13 higher than the annual average emission rate
14 divided by 365. Using the State's approach, it
15 appears to not be protective of the 3- and 24-hour
16 average Class I increments.

17 Next, I would like to comment on EPA's
18 major concerns with baseline emission estimates and
19 the determination of normal source operation. This
20 is number 5 in the scope of the hearing.

21 EPA is concerned that the baseline
22 emissions estimates that the State has prepared
23 will generally overstate the level of baseline
24 emissions used in the modeling, which in turn
25 reduces the level of PSD increment consumption. It

Page 82

1 appears that the State has misinterpreted EPA's
2 rules and guidance in preparing PSD baseline
3 emission inventories and, therefore, the
4 inventories need to be corrected.

5 An important concept is that if an
6 alternative two-year period is selected to
7 represent normal source operation, it must
8 represent normal operation for the baseline period,
9 not normal operation for the life of the source.
10 The PSD program is intended to prevent air quality
11 degradation from all sources measured from specific
12 date, 1977 in North Dakota.

13 The program would have no meaning if
14 source emissions were calculated randomly over a
15 period of years because the estimates would not
16 match the sources that are contributing to ambient
17 concentrations in the base year. If for some
18 reason data are unavailable to characterize
19 emissions during the base year, alternative time
20 periods may be used to better represent actual
21 conditions during the base year.

22 EPA does not support any deviations from
23 the 1976-'77 base year unless data from alternative
24 years provides a better estimate of emissions that
25 actually occurred in the 1976-'77 time period. The

Page 83

1 only exception would be if some serious event
2 occurred that would be extremely unlikely to occur
3 in the future, such as strike, major industrial
4 accident or retooling. These exceptions are
5 discussed on page 39 of the EPA New Source Review
6 Workshop Manual.

7 Another concern we have related to
8 baseline emissions estimates is the State's
9 protocol for preparing baseline oil and gas
10 emissions estimates. These estimates appear to be
11 based on averaging of emissions over a brief period
12 that the source operated rather than annual average
13 emission rates. Although oil and gas sources may
14 only operate for a period of weeks or months at a
15 time, the State approach would give them increment
16 expansion credit as if they were operating
17 continuously for the entire year. With the very
18 large number of such sources, we believe it is
19 unrealistic to assume that they would all operate
20 at high levels all the time.

21 Now, I would like to discuss our major
22 concerns regarding the State's consideration of the
23 Department of Interior's variances in assessing PSD
24 Class I increment consumption. This is number 2 in
25 your scope of the hearing.

Page 84

1 The State is proposing to not count
2 emissions from sources that receive variances from
3 the Federal Land Manager in their Class I increment
4 analysis. There are two sources which received
5 variances from the FLM that are operating today.
6 These facilities are the Little Knife Gas Plant
7 near Killdeer, North Dakota, and Dakota
8 Gasification Company near Beulah, North Dakota.
9 These variances certify that the proposed sources
10 would not adversely affect the air quality related
11 values of Theodore Roosevelt National Park and the
12 Lostwood Wilderness Area, only such as there were
13 no variances granted for the two Class I areas in
14 Montana. We believe the State should include all
15 sources in the current increment analysis.

16 Most recently, John Seitz, director of
17 EPA's Office of Air Quality Planning and Standards,
18 wrote to the State on December 12, 2001, regarding
19 this issue. As explained in the letter, the FLM's
20 job under the Clean Air Act is to protect Class I
21 air quality related values, while it is the job of
22 EPA and the State to protect the increments and the
23 NAAQS.

24 Under the Clean Air Act and our
25 regulations, a permit applicant must demonstrate

Page 85

1 that the emissions from the proposed source will
 2 not cause or contribute to pollutant concentrations
 3 in excess of any applicable increment. In the case
 4 of a Class I increment violation, a source may be
 5 granted a variance under certain conditions.
 6 First, the source must demonstrate to the FLM, and
 7 the FLM certify to the State, that the source will
 8 not adversely impact any Class I air quality
 9 related values. Second, the State must revise its
 10 SIP to correct increment violations.
 11 In our February 2000 letter to the State,
 12 we clarified our position on this issue. Our
 13 interpretation is that the Class I increment still
 14 applies at the two Class I areas in North Dakota
 15 for all increment-consuming emissions that impact
 16 these Class I areas. We believe that the Class I
 17 variance provisions of the Clean Air Act and the
 18 North Dakota Air Pollution Control Rules allow the
 19 State to issue a PSD permit to a particular source
 20 despite a modeled increment violation, but the
 21 State is still required to correct the Class I
 22 increment violation through a revision to the SIP.
 23 This does not necessarily mean that the
 24 PSD source which received the Class I variance has
 25 to reduce emissions to correct increment

Page 86

1 violation. The State could correct the increment
 2 violation by obtaining emission reductions from
 3 other increment-consuming sources or by expanding
 4 the available increment through reduction at
 5 baseline sources.
 6 The Alabama Power decision explains that
 7 although the Class I variance does treat the
 8 applicable PSD source with special consideration,
 9 the, and I quote, totality of facilities may be
 10 subject to measures necessary to cope with a
 11 condition of pollutants exceeding the PSD maximum.
 12 Thus, although the FLM granted variances for these
 13 facilities, the State should revise the SIP to
 14 correct the increment violations.
 15 Finally, I would like to comment on the
 16 State's interpretation of the application of Class
 17 I SO₂ increments at Fort Peck Indian Reservation in
 18 Montana. This is number 6 in your scope of the
 19 hearing.
 20 The State is proposing to not apply Class
 21 I SO₂ increments to the Fort Peck Indian
 22 Reservation in Montana because the State issued PSD
 23 and construction permits prior to EPA's approval of
 24 the Tribe's redesignation to Class I on February
 25 8th, 1984. We wanted to let you know that we are

Page 87

1 reviewing the State's interpretation and will be
 2 consulting with the Tribe on this matter. Once
 3 these steps are completed, we will provide our
 4 comments to the State's interpretation.
 5 In closing, I thank you again for the
 6 opportunity to make this statement at your public
 7 hearing. We will provide detailed written comments
 8 by May 15th on your concerns with the State's -- by
 9 May 15th on our concerns with the State's April
 10 2002 modeling analysis. Although we've had
 11 differing opinions on how best to resolve these
 12 difficult issues, we very much welcome the
 13 opportunity to work through them with the State.
 14 Thank you.
 15 MR. SCHWINDT: Thank you, Mr. Long. I
 16 think what we'll do is take a lunch break right now
 17 and then we'll pick up questions afterwards. That
 18 will give you a chance to rest your throat a little
 19 bit.
 20 MR. LONG: Thanks.
 21 MR. SCHWINDT: So why don't we try to make
 22 it back here about 1:15.
 23 (Noon recess taken at 12:05 p.m. to 1:15
 24 p.m.)
 25

88

MR. SCHWINDT: It's 1:15, and I'd like to get started again. When we broke for lunch, Mr. Long had just completed his presentation, and so we were going to allow some questions of Mr. Long.

Initially, I guess I have a couple to begin with. One is that no major emission sources have been added to the emissions in North Dakota since about the mid 1980s. What has changed EPA's position regarding all the variances that were granted back then and why is this a new issue?

MR. LONG: Well, first of all, I'd like to say we take exception with the position that our position has changed. I think we were silent on the issue in the early '80s and we never did take a position. I've actually asked the question in-house whether or not there's any documentation that we were either consulted on this issue or whether or not EPA volunteered a position and we've not been able to find a paper trail on this, so I don't know that we actually took a position on this in the early '80s.

But in direct response to your question, largely EPA believes this is a delegated program and that the states have the primary responsibility for managing the increment. We did not take a look at

89

this, and I don't know of any comprehensive review that was done until the 1999 analysis that was done by the State. And at that time we saw that the -- although there were not new sources that were introduced since that time, but largely the existing sources that were there and, for the most part, sources that were never granted variances but the older sources, that the increased emissions from those since baseline year, in fact, was causing a major part of the problem with the increment.

MR. SCHWINDT: But it seems like the analysis that was done for Dakota Gasification, their modifications in 1993 reflected some of the same kinds of issues. I guess I still don't understand, you know, why the difference in EPA's position right now.

MR. LONG: You know, honestly, I wasn't there in 1993 and I can't speak for my predecessors so I don't know what the thinking was or the level of involvement at that time. Going back to the earlier ones, I was able to actually find an article that was written in 1982 that talked about the states's analysis of PSD increment and how judiciously the State was managing increment in looking at sources. And it was interesting because,

90

as was mentioned earlier, one of the sources that did receive a variance and was subsequently built was the Little Knife Gas Plant, and in that article, which was written by the -- for an industry journal, there was reference to the fact that the State was looking for ways to try to -- and I think legitimately so -- to permit these facilities because they realized that a gas plant coming on line was going to have the effect of eliminating many of the flaring issues in the gas out there. So while there might be a minor increase from the Little Knife facility, that, in fact, it was going to be more than offset by the reduction of the flaring that was happening. So there were benefits to that that would, in fact, accrue during that period, so I can't speak to the more recent one. I've seen no analysis of that myself.

MR. SCHWINDT: There was a couple other ones. The State has prepared a legal memo that's part of the file to support their position. Does EPA have such an analysis as well?

MR. LONG: EPA is in the process of preparing a response that we will submit on the 15th. The testimony that I gave today, I can tell you it has been reviewed by not only our regional

91

attorneys, but also by several levels within the Office of General Counsel, as well as by the legal counsel for the Assistant Administrator for the Office of Air and Radiation in Washington. So it has -- my testimony has undergone several levels of review within the agency and it has been supported by everyone on that. Further legal argument and documentation will be included in a response we give on the 15th.

MR. SCHWINDT: And you believe you can meet the May 15th time frame?

MR. LONG: We have every intent of meeting the 15th deadline. If for any reason the State receives a request to extend the comment period, we would gladly take opportunity to take a few more days to prepare our comments as well.

MR. SCHWINDT: Okay. One other question is, in your testimony you indicate that the State's modeling does not utilize approved methodologies. Can you provide a summary of those methodologies that you reference in there?

MR. LONG: Excuse me. What page are you looking at?

MR. SCHWINDT: On page 4, about the middle of the page. It doesn't reference anything other

92

1 than, you know, it doesn't use approved
2 methodologies. I guess I was just wondering whether
3 you could provide some kind of a summary of
4 methodologies that are approved. I assume you're
5 talking about both regulations, guidance and --

6 MR. LONG: Right. I think that that's a
7 general statement that references all of the rest of
8 the testimony where we talked about at times it's
9 the statute. When we're talking about the
10 methodologies, our interpretation of the statute
11 where we're talking about how to look at increment,
12 and at other times it's our NSR Guidelines for how
13 to issue permits and things, I think we referenced
14 on the issue of what is a normal operation and that
15 we have specific language in our guidance there on
16 what normal operation is and how to calculate that.
17 So it's various documents that we have available.

18 MR. SCHWINDT: Like on page 9 you
19 specifically reference page 39 in the second
20 paragraph at the very end.

21 MR. LONG: Right, that would be one of the
22 documents that we would believe to be the standard
23 methodologies and how this is established.

24 MR. SCHWINDT: Has that Workshop Manual
25 been finalized?

93

1 MR. LONG: I can't speak to that. I don't
2 know if it's -- I mean, I think that we have a
3 standard workshop manual that has been used for
4 years. Whether or not that is final or if it's a
5 living document that changes as our rules change, I
6 can't speak to that.

7 MR. SCHWINDT: Okay. Would you be able to
8 find that out and provide an answer to that?

9 MR. LONG: We could certainly provide you
10 with a copy of the manual itself and we will make
11 sure to comment on that in the final comments.

12 MR. SCHWINDT: Okay.

13 MR. BAHR: Mr. Long, throughout your
14 written testimony, which was basically the same as
15 your oral testimony, you refer to sometimes rules,
16 regulations, guidance, normal operations, those have
17 all different legal impact. You've mentioned this
18 is a delegated program and, as I understand that,
19 unless there's a rule or regulation or something
20 requiring the State to do it a certain way, they
21 have some discretion --

22 MR. LONG: I would agree.

23 MR. BAHR: -- is that accurate?

24 MR. LONG: And one of the points that I
25 think is important to make, is that we recognize

94

1 that there are times of which you can deviate from
2 our guidance. And, in fact, I would point out that
3 EPA or the regional office, ourselves, deviated from
4 our own guidance when we came up with things like
5 modeling using the 90th percentile. That is nowhere
6 in our guidance, but we thought it was a reasonable
7 alternative when we gave Coal Creek the full credit
8 for the reductions they had made in 2000, rather
9 than looking at the '99 and 2000 90th percentile
10 there. So there were times where we thought there
11 were reasonable deviations from the guidance. The
12 problem comes in when the deviations from the
13 guidance are not a reasonable alternative to what is
14 in the guidance.

15 MR. BAHR: And is there any kind of
16 standard of review, and can you tell me whether the
17 Department's deviations are reasonable? Is this
18 just a, we don't like it so it's not reasonable, or
19 is there some deference to the Department? How does
20 that work?

21 MR. LONG: You're asking a legal question.

22 MR. BAHR: That's because I'm a lawyer.

23 MR. LONG: I'm not an attorney, and we
24 didn't come today with attorneys. We didn't believe
25 the purpose of this hearing was to get into the

95

1 legal arguments.

2 MR. BAHR: Well, no, but a lot of the
3 factual issues are dependent on legal issues. You
4 can't resolve one without the other. So I didn't
5 know if you -- if you don't know the answer to that,
6 that's fine.

7 MR. LONG: I mean, in general, my
8 understanding is that, in fact, the courts have
9 always given EPA the deference on these issues.
10 That there are EPA rules and guidelines and we sit
11 down with the states and we try to interpret those
12 and where there is disagreement, if there are EPA
13 rules and guidelines, the courts have given EPA the
14 deference. It doesn't go to the Department.

15 MR. BAHR: Okay. Now, on the approved
16 methodology, are those approved in any formal or
17 official way, or are they just the ones you've used
18 over the years, when you refer to approved
19 methodology?

20 MR. LONG: Some of the things that we have
21 referenced have gone through public comment and have
22 been incorporated in rules. Others are guidance
23 that are longstanding guidance. The EPA has quite a
24 process of looking at various issues. We might come
25 out with guidance documents that address that and

96

98

1 talk to the issue of how they would be applied. I
2 mean, for instance, in this case the State
3 approached John Seitz, the director of OAQPS. John
4 then responded in writing. That document itself
5 then becomes part of the written record that would
6 help to define future cases in which how PSD
7 increments should be resolved. So it can go all the
8 way from the statute through regulations, through
9 formal guidance to the informal guidance in the
10 nature of a letter.

11 MR. BAHR: And, again, you not being a
12 lawyer, do you believe that those have the same
13 legal, binding effect as a promulgated rule or a
14 statute?

15 MR. LONG: No, they don't have the same,
16 but I think that they're taken into consideration,
17 and you'd have to discuss it any further with the
18 attorneys.

19 MR. BAHR: Are those kind of issues -- in
20 the document that will be submitted by May 15th, are
21 those going to be addressed in that, too, the legal
22 issues that relate to the factual issues?

23 MR. LONG: The comments that we will submit
24 on May 15th will have far more reference to the
25 court cases that may establish the precedent, to

1 respect to the requirement for an offset is one --
2 in the cases where a variance has been granted for a
3 source is what I would like to discuss with you
4 briefly. Has EPA ever done a SIP revision or a SIP
5 call to require an offset or correction of a modeled
6 increment violation, to your knowledge?

7 MR. LONG: To my knowledge, we have never
8 found a modeled increment violation before. There
9 have been cases in which it's been reviewed, but, to
10 my knowledge, this is the only time in which the
11 modeling analysis has positively shown that there
12 were increment problems.

13 MR. CONNERY: Mr. Long, you're aware of the
14 proceedings that were recounted by Mr. O'Clair here
15 that occurred in 1982. He described five sources
16 that had exceeded the increment and where EPA had
17 approved the permit.

18 MR. LONG: Correct.

19 MR. CONNERY: Can you tell me why EPA
20 approved the permit knowing of increment violations
21 without requiring an offset?

22 MR. LONG: I wasn't in the program in 1982
23 so I can't really speak to what was in the minds of
24 the people that were in the program at that time.

25 MR. CONNERY: Well, let me just tell you

97

99

1 specific rules and regulations, the statutory
2 citations and things of that nature. Our
3 understanding of the purpose of the hearing today
4 was for informal comments and not for formal legal
5 comments.

6 MR. BAHR: And I understand that. It's
7 just, you know, you referenced rules and regs and
8 things, but there's no citation to those.

9 MR. LONG: Those will be provided.

10 MR. BAHR: Okay. That will make it a lot
11 easier. Okay. Thank you.

12 MR. SCHWINDT: Are there any questions from
13 the general audience? If there are, we'd ask that
14 you come up to use the microphone up here or if you
15 have a microphone over there, that's fine, but one
16 of the microphones tied into the system here so that
17 we can get it on tape. And, also, if you would
18 state your name and who you represent, that would be
19 beneficial.

20 MR. CONNERY: My name is Bob Connery, and
21 I'm with Holland and Hart in Denver, and I'm here
22 representing Basin Electric Power Cooperative and
23 Dakota Gasification Company. And my questions will
24 be brief.

25 The positions that you have taken with

1 that Mr. Tikvart, the head of modeling at EPA, the
2 regional administrator and several other
3 representatives were at those hearings and testified
4 and approved and signed off on every one of those
5 permits.

6 MR. BAHR: Sir, I'd like to remind you this
7 is a time to ask questions, not to provide
8 testimony.

9 MR. CONNERY: The last question I've got --

10 MR. LONG: One quick response to that, is
11 that Mr. Tikvart is still around. Mr. Tikvart is
12 one of the people who reviewed these comments and
13 concurred with these comments, so this does
14 represent the position within EPA and even some of
15 the people that were involved in that action at that
16 time.

17 MR. CONNERY: Last question I have has to
18 do with whether I understand the position that EPA
19 is taking with respect to whether or not we need to
20 have ambient monitor data to know where the baseline
21 is or whether we just need to know what the increase
22 in emissions is in determining whether the increment
23 succeeded?

24 MR. LONG: I think the longstanding policy
25 within EPA is to look at the incremental increase in

100

1 emissions and then to model that. Monitoring data
2 is at times useful. In this case, unfortunately, I
3 think it provides little useful things, partly due
4 to the lack of reliable monitoring data for, in
5 fact, the increment years, and then when you couple
6 it with looking at what was happening at the nearby
7 oil and gas activities, you realize the limitations
8 of use of the monitoring data.

9 MR. CONNERY: If I could be permitted just
10 one more question. I have looked everywhere and
11 looked at all of the EPA rules and all of its
12 guidance. I, of course, requested 45 days ago of
13 your office to find out if there was any regulations
14 or any guidance that would help the State of North
15 Dakota in trying to figure out how to do this
16 exercise in protecting the increment as opposed to
17 new source review. I have been unable to find any
18 rules, any guidance, of any kind, even in documents
19 like the draft workshop manual, which incidentally
20 is not law and doesn't have any standing, hasn't
21 been adopted in final.

22 Could you tell me whether you know of any
23 rules or guidance or cases or anything that says how
24 to do this?

25 MR. LONG: The "this" being?

101

1 MR. CONNERY: How to protect the increment
2 as opposed to new source review. We've got lots of
3 rules on new source review, but all we have is
4 51.166, which says if you discover that the
5 increment is exceeded, you'll do something about it.

6 MR. LONG: And, I mean, that's true. I
7 mean, largely what EPA looks at is if you have an
8 increment violation, we don't target sources. We
9 don't -- we rely upon a state through SIP process to
10 establish where the emission reductions would come
11 in order to adequately address that. So you're
12 right, there is a certain amount of freedom on the
13 part of the State to identify it using whatever
14 means they think appropriate to determine where the
15 emission reduction should come.

16 MR. CONNERY: So your testimony about the
17 State not following accepted rules and procedures
18 and the like really pertains not to this exercise of
19 protecting the increment where they have tried to
20 come up with a scheme that works, but to other
21 details and regulation?

22 MR. LONG: I guess I misunderstood your
23 question. I thought you were asking once that
24 increment is determined to be violated, how you
25 would protect that as opposed to how you would go

102

1 about doing the modeling in order to determine
2 whether or not -- I mean, we think that there is an
3 adequate history and basis through the modeling
4 guidelines and other documents that would
5 establish -- many that the modeling community is far
6 more familiar with than I -- that would establish
7 how to go about this. There's also a long history
8 and as was pointed out by Mr. O'Clair, literally
9 hundreds of cases in which modeling analysis has
10 been done nationwide to look at, in most cases, an
11 individual source's contribution to PSD increment.
12 In this case we're looking at a cumulative impact.

13 MR. CONNERY: Thank you. I appreciate it.

14 MR. SCHWINDT: Anybody else have any
15 questions?

16 MR. WITHAM: This is Lyle Witham, Assistant
17 Attorney General. Dick, I have a couple follow-up
18 questions.

19 You would agree then that it is a
20 longstanding policy to model increment-consuming
21 emissions only if that is not contained in either
22 statute or promulgated rule?

23 MR. LONG: I'm not -- Lyle, I'm not an
24 expert on this, but I believe that the 1980 modeling
25 rules specifically address that, although I'd have

103

1 to go back. I'm not an expert on that.

2 MR. WITHAM: By "rule" you mean the rule
3 itself or the preamble?

4 MR. LONG: The preamble and the rule, I
5 believe, although I probably shouldn't even try to
6 answer it, because I'm not sure. As has been
7 pointed out, there were several different rules that
8 were proposed in the early years of this and I rely
9 upon the modelers to tell me what these specific
10 rules are.

11 MR. WITHAM: You stated that you believe it
12 is -- it is clear under the law that it is the
13 state's discretion to manage the increment. Now,
14 what does that phrase mean, "manage the increment"?

15 MR. LONG: By that what I really mean is,
16 that if there is an increment violation, that we
17 would view it as a state's primary responsibility to
18 identify and get enforceable limits that would
19 eliminate the increment violation. So they would,
20 using whatever criteria they felt appropriate, and,
21 obviously, the most common one might be cost of
22 removing a ton. So you have various sources in the
23 mix and some sources might be able to remove SO₂ at
24 very low cost. Others that are, for instance,
25 partially controlling their emissions already, it

104

1 would be very expensive for them to increase their
2 emission reductions. So the cost per ton would be
3 exorbitant. So we would leave it up to the state to
4 determine that.

5 If you can get it from a mobile source
6 sector, we don't particularly care. If you get it
7 from, you know, a specific sector, doesn't really
8 matter. So long as you can demonstrate that the
9 increment is being protected.

10 MR. WITHAM: So in your mind the phrase
11 "management of the increment" applies only to
12 correction of the increment and not to managing the
13 source of emissions and how to calculate and
14 determine modeling of those emissions, et cetera?

15 MR. LONG: Primarily to the management. To
16 a certain extent we allow a deviation, and we would
17 allow states to look at managing the increment while
18 doing the modeling in a certain -- in ways that they
19 might deem to be appropriate. And, once again, I go
20 back to what the EPA did in this, which was not done
21 in a vacuum.

22 In fact, in the early part of the
23 discussions with the North Dakota Department of
24 Health, it was pointed out that at no point do you
25 have all of the major sources emitting at their

105

1 maximum emission rate, so it was unreasonable to
2 require the State of North Dakota to, in fact, model
3 all of those at that maximum emission rate. And at
4 that point we negotiated with the State and came up
5 with this 90th percentile concept because it could
6 be demonstrated that there were, in fact, days at
7 which the cumulative effect from all of those
8 sources was that the emissions were equal to the
9 90th percentile emissions. That is an example of
10 modeling which we think, although it may not be
11 exactly according to our guidelines, but it was a
12 reasonable alternative. The problem comes in when
13 the options that you're pursuing are not a
14 reasonable alternative to our guidelines and would
15 result in something substantially different.

16 MR. WITHAM: The Exhibit 33 presented with
17 our testimony today shows that the actual rate of
18 emissions that we modeled is actually exceeded on an
19 hour-by-hour basis only 24.6 percent of the time.
20 And you agree to go to a 10 percent of the time.
21 Now between those two policy choices that the agency
22 can make, who gets to make the call there? If we
23 think that 24.6 percent of the time is a reasonable
24 policy choice and model that level of emission and
25 you say it's 10 percent of the time, between those

106

1 two policy choices, who gets to make the call? Is
2 it your call, or is it our call because we manage
3 the increment, because that's what the law says?
4 Who gets to make that call?

5 MR. LONG: My understanding is that's
6 largely the part of this hearing, is to hear -- and
7 the State hosted both the State analysis as well as
8 EPA's analysis and you're taking input from the
9 public on which one they feel is appropriate. Both
10 the State and EPA have draft analyses that are out
11 there for which we are receiving comments at the
12 moment. Our comment period ended last week. We
13 received a number of comments, and you're taking
14 comments now. I don't know that there's a hard
15 answer in terms of which one gets deference on this.

16 MR. WITHAM: Also in the testimony we
17 presented under -- on pages 20 through 23, figures 6
18 and 7 of the document, entitled "A review of the
19 Historical Application of Prevention of Significant
20 Deterioration in North Dakota," we also have two
21 graphs there showing cumulative frequencies of
22 different monitored, actual monitored rates, or
23 concentrations in the North Unit, the South Unit,
24 Dunn Center, as you mentioned, Hannover, and as to
25 the North Unit we have a frequency that covers the

107

1 1980 to 1998 period of time and also the 1984 to
2 1998 period of time.

3 Now, for the South Unit, for example, it
4 shows that a rate of a concentration of sulfur
5 dioxide exceeds 5 parts per billion or approximately
6 12 micrograms per cubic meter less than 1 percent of
7 the time. The NAAQS standard is 1,300 micrograms
8 per cubic meter.

9 What is a reasonable policy choice given
10 those low levels of concentration, and how much
11 discretion should the State have in making choices
12 in making determinations? Another way of asking the
13 question is, what role should monitoring play in
14 determining whether the SIP is adequate and whether
15 the air quality has deteriorated in the State or
16 not?

17 MR. LONG: I think my statement in the
18 written -- the written statement that I submitted
19 and read into the record kind of stands for itself.
20 The problem with monitored data is it cannot
21 distinguish increment-consuming sources from
22 baseline sources. It can't distinguish background
23 sources, and you have some significant background
24 sources over the Canadian border that may influence
25 your monitored sites. It can't distinguish

108

1 localized impacts from those generalized impacts
2 that the modeling will pick up. So that's why we
3 believe, as we've shown, the strong correlation
4 between the buildup of the oil and gas interests in
5 the counties in and around the Theodore Roosevelt
6 National Park and the monitors and the strong trend
7 of those influencing the monitors in that area.

8 So to us it's sort of a classic case of,
9 yes, if you're selective in looking at your
10 monitoring data, you can show that you have a trend
11 of air quality improvement, but what that doesn't
12 take into consideration are those localized impacts,
13 the background sources. So there are a lot of
14 limitations to using the monitoring data. I think
15 that it is useful and it's something that I would
16 recommend that everybody look at to see if there's
17 anything there.

18 In this case the monitoring data is so out
19 of line with the modeling data that you have to ask
20 the question why would that be? And I think in this
21 case that there are a lot of answers as to why the
22 monitoring data is not, in fact, reliable in this
23 case. It's unfortunate, because I wish that we
24 could look at monitoring data and be able to rely
25 upon it, but I think in this case it's not reliable.

109

1 MR. WITHAM: But you're talking about
2 monitoring data over a 20-year period of time,
3 aren't you? And the question that I asked you takes
4 all of those -- this graph takes all of that data
5 over all of those periods of time for all those
6 sources and it shows that the monitored levels
7 exceed 1 percent of the max only 1 percent of the
8 time in the South Unit and in the North Unit after
9 1984 less than 2 percent of the time they exceed 1
10 percent of the max.

11 Now, when you choose between monitoring and
12 modeling, given that kind of a scenario, and you're
13 talking about air quality in the State, which policy
14 is it more -- in terms of policy which makes more
15 sense, to choose monitoring or modeling?

16 MR. LONG: I guess in response to your
17 question I would have to say the purpose of the PSD
18 increment analysis is not to look at the max. I
19 think what we're looking at is, in fact, the
20 increment. It was not a policy choice on EPA's part
21 to look at a five-microgram increment or the 24-hour
22 increment. In fact, that's a statutory requirement
23 that is in there.

24 Your question on the reliability of the
25 monitoring data for that, I think that we've tried

110

1 to respond to that and we do see that you were able
2 to correlate with the monitoring data substantially,
3 and I think that that speaks to the inputs that were
4 made into the model when you ran that, and there is
5 something like 30 to 40 different inputs in terms of
6 the meteorologic conditions and things that the
7 model runs on. Those did not follow the IWAQM, the
8 Interagency Work Group on modeling protocols, but
9 since there was a strong correlation, in fact, EPA
10 used the same switches in our model as you used in
11 yours. So I --

12 MR. WITHAM: Okay. I'll leave you with one
13 question then. Can you or Mr. Golden cite those
14 documents by title or the rules themselves which EPA
15 believes describes aspects of correct protocol for
16 modeling?

17 MR. LONG: Yes, and --

18 MR. WITHAM: And are those documents
19 statutes, rules, or guidance?

20 MR. LONG: I think it would be a
21 combination of all of the above.

22 MR. BAHR: Will those be referenced in the
23 legal memorandum?

24 MR. LONG: Yes, it would.

25 MR. WITHAM: I have nothing further.

111

1 MR. MENNEL: My name is James Mennell.
2 I'm here on behalf of Great River Energy.

3 You raised a question why would the
4 modeling data be so out of whack with the monitoring
5 data, the monitored data, and I can think of a
6 different answer than the one you came up with. You
7 talked also about how EPA has followed approved
8 methodologies in doing its modeling, and if EPA had
9 followed the IWAQM recommendations and used what it
10 has used in every other modeling exercise, the 100
11 percent as opposed to the 90th percentile, would the
12 modeled results have been found to be valid within a
13 factor of 2?

14 MR. LONG: Would they have been found to be
15 valid? I think yes. I think that they -- if we
16 would have used the default measures -- I believe in
17 fact -- I could be wrong on this one, but I believe
18 that in the State's 1999 analysis that they did use
19 the higher levels and that's one reason why our
20 modeling results from this year differ from the
21 State's modeling analysis in '99. In fact, we came
22 up with what we believe to be a reasonable
23 compromise from that.

24 MR. MENNEL: So it's approved
25 methodologies or reasonable compromise?

112

1 MR. LONG: Well, within the range of the
2 modeling guidelines, I think that, as I've stated,
3 we allow certain deviations if there's justification
4 for such.
5 MR. MENNEL: And what would those
6 justifications be?
7 MR. LONG: Excuse me, but this is getting
8 into cross-examination, and I didn't --
9 MR. BAHR: We need to limit our questions
10 to clarification.
11 MR. MENNEL: And I'm trying to just get a
12 little bit of clarification as to whether if you ran
13 the model the way the EPA recommends you run this
14 model, the data would be considered valid within the
15 factor of 2 measure EPA uses to assess model
16 validity.
17 MR. BAHR: I believe he answered that,
18 based upon his understanding.
19 MR. MENNEL: What was the answer?
20 THE WITNESS: I believe that, yes. I mean,
21 we believe that if you ran the model using all of
22 the IWAQM default measures, if you put in maximum
23 figures, that, in fact, that would be a valid result
24 and that you could make regulatory decisions based
25 on that. In this case having sat down with

113

1 coregulators and looked at all of those, I think
2 that we realize there were reasonable arguments for
3 deviating from that and that's one reason why our
4 modeling analysis is, in fact, a compromise from the
5 1999 modeling analysis.
6 MR. MENNEL: Well, I guess I don't think
7 that the data that's in the record at this point,
8 when you look at the State's validation study,
9 supports the few compared predicted to observed
10 data, that you would be within that factor to ratio
11 if you just used the IWAQM setting.
12 MR. LONG: Is that your testimony, or is
13 that a question?
14 MR. MENNEL: It's my testimony.
15 MR. BAHR: I was about to ask that.
16 MR. MENNEL: I have one more question for
17 you. Actually, I've got two more questions for you.
18 As part of Exhibit 34, which constitutes
19 your testimony, you include figures 2 and 3, which
20 relate to the monthly production for oil and gas
21 facilities. Do you have any data regarding
22 emissions from these facilities and how does that
23 correlate to this trend line?
24 MR. LONG: No, I don't. Figures 2 and 3
25 were actually taken directly off the State -- The

114

1 North Dakota Industrial Commission's Website, and
2 there were no emissions related to that. However,
3 in discussions with the State, it's clear that the
4 gas plants were not on line at the baseline period
5 and really came on line in the early '80s, so there
6 was a lot of flaring that was gone on. The point to
7 this is simply that the flaring is likely to have
8 followed a similar trend to production, as you
9 increase production and drill more wells, you're
10 going to be doing more flaring. So we're simply
11 pointing out that during baseline year of 1977 there
12 was likely to be less flaring going on than there
13 was in '82 and, therefore, the correlation with the
14 trend line for the ambient monitoring.
15 MR. MENNEL: As I understand EPA's
16 position, the baseline period really should reflect
17 a two-year time frame from 1976 and 1977; is that
18 correct?
19 MR. LONG: Correct.
20 MR. MENNEL: Do you have any data about
21 production or emissions from 1976 with respect to
22 those oil and gas facilities itself?
23 MR. LONG: Yes. Actually, the Website has
24 production numbers back to 1951, and it wasn't on
25 the chart. I just took the chart directly off the

115

1 Website, but they have a spreadsheet that has all
2 the production numbers. The 1976 -- my
3 recollection, and you can go to the Industrial
4 Commission's Website, was that there was really a
5 ramp-up of oil and gas activities, I believe to
6 about the 1970 period, and then there was actually a
7 trough in the production from the early '70s through
8 '77, '78 and then there was a large ramp-up. So you
9 can check that on the State's Website, but we have
10 looked at that, and there was no evidence that '76-
11 77 time frame was, in fact, a period at which there
12 was a lot of oil and gas activities.
13 There is also a chart on that Website that
14 looked at the production rate vis-a-vis the cost per
15 barrel of oil, and the cost per barrel of oil went
16 up substantially in the '78-79 time frame and that's
17 when you saw the corollary increase in production.
18 MR. MENNEL: One last question and it
19 relates to how increment consumption is assessed by
20 EPA. If you had a baseline source that operated at
21 half capacity in the baseline years of 1976, 1977
22 and they didn't have a strike or fire or some other
23 sort of unusual event, and every year after 1977
24 operated at 60 percent capacity, would it be EPA's
25 position that that source consumed increment?

116

MR. LONG: Yes, it would.

MR. MENNELL: Thank you.

MR. SCHWINDT: Anyone else have any questions?

MR. HARMS: Bob Harms, Governor Hoeven's office. Dick, just a couple of questions.

When did EPA's draft modeling get published?

MR. LONG: Our draft modeling?

MR. HARMS: Yes.

MR. LONG: I believe it was March 5th that we sent it out to the public.

MR. HARMS: And it was completed when?

MR. LONG: January.

MR. HARMS: And that is a draft modeling report that EPA is continuing to refine; is that right?

MR. LONG: Right. We have taken comments on it and we expect to make some changes to it. I mean, for instance, one of the differences between what the State did and what EPA did, as was pointed out earlier, is we used a different time frame. At the time '99 and 2000 were the most recent two years of data. We fully intend to go back and model it using the 2000, 2001 data.

117

MR. HARMS: Okay. And will you incorporate additional oil and gas information, too, then in your review of that draft?

MR. LONG: Our intent was if we find data that would support whether it's increment consuming or increment expanding, that we would incorporate that. And we haven't had time, Bob, at this point, to look at what's been presented and determine whether or not -- which way it goes.

MR. HARMS: Sure. One other question. With respect to guidance and policy, there's been a fair amount of discussion about that this morning and this afternoon. Would it be fair, do you agree that the difference between EPA and the State is the legal effect of what guidance and policy is with respect to the PSD program? Is that a fair summary, do you think, in your view?

MR. LONG: I don't know. There are differences of opinion in terms of this. My preference for characterizing it is that the State has chosen a series of policies which they believe have viable legal underpinnings that allow them to come to different conclusions and different policy calls than what EPA used. We have relied largely upon our experience in 20 years of looking at this

118

and we deviated in a number of areas. For the most part in those areas -- Coal Creek being another one where I think the State made an argument and, in fact, it was discussed briefly with the folks from Great River Energy here, and I've looked at their annual statements and things. The reductions that were made between '99 and 2000, the intent was to be permanent.

And so based upon those discussions and what we believe to be a reasonable argument, we did agree to some of those policies, but I think I would characterize it as policy decisions that may be founded in legal underpinnings and different arguments, and I think as we've discussed with the State staff before, there are probably a number of different legal arguments that could be applied here.

MR. HARMS: Okay. So having said that, I guess what I'm trying to get at is, to refine the departure between EPA and the State. It seems that that is a key difference between the two, that EPA used its policy and guidance as essentially binding upon the State and the State takes a different view. Would that be a fair summary of what you think the disagreement is, regardless of how it's resolved?

119

MR. LONG: Off the top of my head I would think that would be a fair assessment.

MR. HARMS: Okay. Just two other quick things. When did EPA notify the State, if it has done so, with respect to EPA's position on the waivers or the variances that were granted in '82, '83, '85, and '93? When did EPA notify the State that EPA felt that the State, in spite of its directives, needed to direct certain exceedences?

MR. LONG: To my knowledge, the first time that any position was taken by EPA -- we remained silent on this up to that time -- was a letter that I signed in February of 2000.

MR. HARMS: Okay. Very good. Last question. And I just want to make sure that I understand you correctly, but when you were testifying, it was my understanding that you were -- that EPA was asserting that the State has taken a position in this graph modeling exercise that will result in higher emissions in the State. And I was wondering, a, is that a correct understanding of EPA's view of the State's proposal, and, b, is that an unavoidable consequence in your view, or is there something else that we might do to avoid that result?

120

MR. LONG: I think clearly the State's position is founded on a series of policy calls, each of which, if you would look at them, is this a policy call that's going to result in controlling emissions more or is it going to be allowing higher emission rates. To my knowledge, virtually every policy decision that was made falls on the side, and I can't speak to intent, but simply the outcome, virtually every policy decision that was made had the consequence of allowing higher emissions in the current day.

And I think that -- I mean, my testimony speaks for itself in terms of some of the issues. We believe that the maximum allowable ambient level is a construct that is not founded in the statute and deviates substantially from any past practices within EPA or anywhere in the regulated community. And that is a significant issue that we need to discuss. Using average emissions is another one. The point after point that we make.

MR. HARMS: Yeah, I understand. I think I understand that first one. I guess what I'm wondering about is, Mr. O'Clair indicated in his presentation the State is considering permit adjustments. What I'm wondering about is, even

121

though the State and EPA may disagree with respect to the 3-hour and the 24-hour standard, if permit adjustments are made, is the idea that the State's proposal will unavoidably result in higher emissions? It's not an unavoidable consequence, is it? That can be avoided, can't it?

MR. LONG: I guess definitional issues here. I didn't mean to imply that the consequence of the State's analysis would be that we would see ever increasing emissions, and my apologies if that was the interpretation. What I meant to indicate was that by virtue of these policy decisions, the State was in a position in which you found that there were no increment violations, that essentially that the emissions would be capped at the existing levels. I realize that difference, and I didn't mean to imply that the emissions were going to go up. It was simply that at each of those policy decision calls that were made, each of them determined whether or not the increment was violated, and if it was, the extent to which emission reductions would need to be achieved in the future. So it was more -- whether or not reductions need to be achieved and the extent of those reductions.

122

MR. HARMS: Last question. So another way of characterizing that may be that those policy choices might have been viewed as industry friendly?

MR. LONG: Certainly I think that that is a logical conclusion.

MR. HARMS: Okay. Thank you.

MR. SCHWINDT: Thank you. Anybody else?

MR. PAINE: My name is Bob Paine. I'm with ENSR Corporation and working as a consultant with Basin Electric. Dick, just a couple questions.

In other questions you mentioned some additional Calpuff modeling that EPA would do as refinement, such as incorporating the year 2000 and 2001 current emissions data and any oil and gas data that's made available. Are there any other refinements that EPA is considering in their model?

MR. LONG: As I indicated, we took comment. The comment period ended just last week and we haven't had time to go over those comments, but the purpose of that was to really look at were there other changes that needed to be made. We know that we've received some adverse comments, for instance, on not using the IWAQM default models and that we should -- that there were good reason why those defaults were put in, that we ought to go back and

123

amend the model to show those. We'll be reviewing the comments and we'll be coming out with our final analysis later, and I'm really not in a position today to say exactly what those changes are going to be.

MR. PAINE: One other question. There's been discussion about the uncertainty of the peak emissions versus the annual averages and EPA has used the 90th percentile of the maximum. Have you considered using actual hourly emissions concurrent with meteorology of the same year as a better way to do this?

MR. LONG: That was, in fact, discussed with the State and that was essentially the State's proposal to do in their proposal of April 2000. Our feeling is that that has merit if you're looking at -- in your rearview mirror and you want to look at the past year and whether or not the increment was violated for that period. You would have to talk to the State of North Dakota. I believe that they did run that model and even that showed that there were increment violations for that period when they coupled the data, the CEM data, continuous emission monitor data, for the year 2000 with the meteorologic data for the year 2000.